



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

CR

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,494	05/10/2005	Andrew C. Lewin	1241116	4705

23117 7590 09/29/2006

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

LEE, PATRICK J

ART UNIT PAPER NUMBER

2878

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/534,494</p>	<p>Applicant(s)</p> <p align="center">LEWIN ET AL.</p>	
	<p>Examiner</p> <p align="center">Patrick J. Lee</p>	<p>Art Unit</p> <p align="center">2878</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05102005, 07132005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the filter as stated in claim 5, the detection of ambient light in claim 6, and the element responsible for adaptation for different frequencies as stated in claim 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the

Art Unit: 2878

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

In order to be in accordance with 37 C.F.R. § 1.77(c), there should be section headings throughout the specification.

Appropriate correction is required.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

5. Claim 1 is objected to because of the following informalities:

In order to be in accordance with 37 C.F.R. § 1.75(i), elements as stated in claim 1 should be separated by indentations.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 4, & 9 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,726,443 to Immega et al.

With respect to claim 1, Immega et al disclose a device comprising: light source (12, 33, 35, 41, 59) as an illumination means for illuminating a scene with an array of spots of light; sensor (1, 51) as a detector arranged to receive light reflected from objects (24, 6, 7) as a scene; and mask (3) as a mask with both transmissive and non-transmissive portions. Immega et al illustrates the mask arranged such that light within a first range of distances from sensor (1) is transmitted through the mask (3), while light that would not be transmitted through mask (3) would be within a second range of distances.

With respect to claim 4, Immega et al disclose the use of infrared sources (see column 14, lines 48-52; column 15, lines 23-27).

With respect to claim 9, Immega et al disclose mask (3) to have holes as transmissive windows and a substantially occluding portion as a substantially non-transmitting material. Such characteristics of the mask are illustrated in Figure 20 with opaque regions (71) as the substantially non-transmitting material.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 2-3, 5-8, & 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,726,443 to Immega et al.

Immega et al disclose the device as described in the discussion of claims 1, 4, & 9.

With respect to claim 2, Immega et al does not explicitly disclose that the reflected light would be transmitted to the detector if the target is within a predetermined distance of sensor and reflected light is not transmitted if the target is outside that predetermined distance, but such is illustrated in figure 1, where more of the surface of object (7) is imaged in comparison in comparison to object (6). However, such would still be obvious to one of ordinary skill in the art because if an object is at a location so far from sensor (1), it is more likely that the light reflected would not be within an appropriate range of angles of sensor (1).

With respect to claim 3, the modified Immega et al does not explicitly disclose the mask transmitting light reflected from a target more than a predetermined distance away and not transmit light from within the predetermined distance, but such would have been obvious to one of ordinary skill in the art because the location of the object (7) too close to the mask (3) could lead to light from sources (12, 33, 35, 41, 59) striking object (7) at

such a sharp angle that most of the reflected light is incident on the opaque portions (71) of mask (3) or misses the mask (3) altogether.

With respect to claim 5, the modified Immega et al disclose color filters (15) applied to detectors (1), such that only light of a predetermined frequency or wavelength would impinge detector (1), but the modified Immega does not explicitly disclose the modulation of illumination means (12, 33, 35, 41, 59). However, such would have been obvious to one of ordinary skill in the art because such would allow the device to monitor what is being emitted by the illumination means and prevent erroneous detection of ambient radiation.

With respect to claim 6, the receiving of ambient light is not explicitly disclosed, but correction for such radiation would be obvious to one of ordinary skill in the art because ambient radiation can adversely affect the operation of the device by leading to false detections.

With respect to claim 7, while the modified Immega et al does not explicitly disclose the mask (3) transmitting a different amount of reflected light in each distance range, the modified Immega et al does disclose the range of the device (see column 18, lines 42-63). However, such would be inherent from the device due to the length and width of the holes within mask (3) because if an object is located too far away, there will only be a small window in which the reflected light can fit such that the reflected light is incident on detector (1), while if the object is closer, there will be a greater window and thus a higher possibility that a greater amount of light would be incident on detector (1).

With respect to claim 8, the modified Immega et al disclose color filters (15) applied to detectors (1), such that only light of a predetermined frequency or wavelength would impinge detector (1), but the modified Immega does not explicitly disclose the modulation of illumination means (12, 33, 35, 41, 59). However, such would have been obvious to one of ordinary skill in the art because such would allow the device to monitor what is being emitted by the illumination means and prevent erroneous detection of ambient radiation.

With respect to claim 10, the modified Immega et al illustrate in figures 8a and 11 the disposition in light sources (12a) within a light guide with a defined optical pathway (80). While the use of substantially reflective sides and projection optics are not explicitly disclosed, such would have been obvious to one of ordinary skill in the art in order to produce a focused beam of light and to prevent unnecessary loss of any light.

With respect to claim 11, the modified Immega et al illustrate the light guide to comprise a tube with a square cross section.

With respect to claim 12, while the modified Immega et al does not explicitly disclose the use of a hollow tube with reflective internal surfaces, such would have been obvious to one of ordinary skill in the art because such would allow the disposition of a plurality of light emitting sources.

With respect to claim 13, the modified Immega et al illustrates the tube to comprise solid material such that a substantial amount of light incident at interface undergoes total internal reflection through optical pathway (80).

With respect to claims 14-15, the use of LEDs is not explicitly disclosed, but such would have been obvious to one of ordinary skill in the art because LEDs provide the necessary illumination at a relatively reasonable cost.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,585,626 to Beck et al and US 6,572,139 B2 to Adachi disclose optical proximity sensors.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2878

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PJL
September 25, 2006

Patrick J. Lee
Examiner
Art Unit 2878